

REMARKS

This Amendment and Response is submitted in reply to the Office Action dated June 20, 2006, in which the Examiner:

rejected claims 8-10 under 35 U.S.C. § 112, second paragraph, as indefinite
rejected claims 1, 6 and 9 under 35 U.S.C. § 102(b) as anticipated by U.S.

Patent No. 4,983,305 to Oklejas et al.;

rejected claims 1-3 under 35 U.S.C. § 102(b) as anticipated by DE 43 31 102 (DE '102);

rejected claims 1, 3-5 and 11 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 4,909,934 to Brown et al., either alone or in view of DE '102;

rejected claim 7 under 35 U.S.C. § 103(a) as unpatentable over Oklejas in view of U.S. Patent No. 6,977,041 to Kim et al.;

rejected claim 8 under 35 U.S.C. § 103(a) as unpatentable over DE '102, alone; and

rejected claim 10 under 35 U.S.C. § 103(a) as unpatentable over Oklejas, alone.

Applicants respectfully traverse the rejections below. Claims 1-11 are currently pending. The current Amendment incorporates recitations of claims 3 and 4 and 5 into claim 1, rewrites claims 8 and 9 in independent form, adds claim 12, and amends claims 1-11, leaving claims 1-12 pending upon entrance of the current Amendment. Pursuant to the current Amendment, claims 1, 8 and 9 are independent claims.

Claims 8-10 were rejected under 35 U.S.C. § 112, second paragraph, as indefinite for claim recitations lacking antecedent basis. Applicants respectfully submit that all recitations of the amended claims 8-10 have the proper antecedent basis, and request that the rejection of claims 8-10 under 35 U.S.C. § 112, second paragraph, be withdrawn.

Claim 1 was rejected under 35 U.S.C. § 102(b) as anticipated by Oklejas. An anticipation rejection under 35 U.S.C. § 102 is improper unless a single prior art reference shows or discloses each and every claim recitation.

Applicants' amended claim 1 recites, in part, a water purification device wherein the primary side is connected with a pressure control device, which controls the pressure on the primary side in dependence of the pressure on the secondary side.

Oklejas does not show or disclose each and every claim 1 recitation. For instance, Oklejas does not show or disclose a water purification device having a pressure control device, which controls the pressure on the primary side in dependence of the pressure on the secondary side.

Accordingly, Applicants respectfully submit that the rejection of claim 1 under 35 U.S.C. § 102(b) as anticipated by Oklejas is improper for at least this reason, and should be withdrawn.

Claim 6 was rejected under 35 U.S.C. § 102(b) as anticipated by Oklejas. Claim 6 depends directly from claim 1 and includes additional recitations thereto. Accordingly, Applicants respectfully submit that the rejection of claim 6 under 35 U.S.C. § 102(b) as anticipated by Oklejas is improper for at least the same reasons stated in connection with claim 1, and should be withdrawn.

Claim 9 was rejected under 35 U.S.C. § 102(b) as anticipated by Oklejas. An anticipation rejection under 35 U.S.C. § 102 is improper unless a single prior art reference shows or discloses each and every claim recitation.

Applicants' amended claim 9 recites, in part, a water purification device wherein a pressure control device controls the pressure on the primary side in dependence of the quality of the water to be purified.

Oklejas does not show or disclose each and every claim 9 recitation. For instance, Oklejas does not show or disclose a pressure control device that controls the pressure on the primary side in dependence of the quality of the water to be purified. Instead, Oklejas discloses directing saltwater at 1000 psi into a membrane chamber 11 where salt is removed from at least a portion of the saltwater. (See, e.g., col. 3, lines 47-52.) A throttle valve 17 acts to maintain the proper pressure in the membrane chamber 11. (See, e.g., col. 3, line 68 – col. 4, line 2.) Thus, Oklejas discloses a throttle valve 17 apparently pre-set to maintain an appropriate pressure for the purification of saltwater, and does not show or

disclose that any element of its reverse osmosis system 1 controls the setting of throttle valve 17 in dependence of the quality of the water to be purified, unlike the pressure control device recited by Applicants' claim 9.

Accordingly, Applicants respectfully submit that the rejection of claim 9 under 35 U.S.C. § 102(b) as anticipated by Oklejas is improper for at least this reason, and should be withdrawn.

Claim 1 was rejected under 35 U.S.C. § 102(b) as anticipated by DE '102. An anticipation rejection under 35 U.S.C. § 102 is improper unless a single prior art reference shows or discloses each and every claim recitation.

Applicants' amended claim 1 recites, in part, a water purification device wherein the pressure control device includes a control valve, which is connected to the diaphragm unit, and wherein the control valve has a valve element, the valve element being acted upon by the pressure on the primary side in either an opening or a closing direction, and by the pressure on the secondary side in the other of the opening or the closing direction.

DE '102 does not show or disclose each and every claim 1 recitation. For instance, DE '102 does not show or disclose a control valve having a valve element, the valve element being acted upon by the pressure on the primary side in either an opening or a closing direction, and by the pressure on the secondary side in the other of the opening or the closing direction.

Accordingly, Applicants respectfully submit that the rejection of claim 1 under 35 U.S.C. § 102(b) as anticipated by DE '102 is improper for at least this reason, and should be withdrawn.

Claims 2 and 3 were rejected under 35 U.S.C. § 102(b) as anticipated by DE '102. Claims 2 and 3 both depend directly from claim 1 and include additional recitations thereto. Accordingly, Applicants respectfully submit that the rejection of claims 2 and 3 under 35 U.S.C. § 102(b) as anticipated by DE '102 is improper for at least the same reasons stated in connection with claim 1, and should be withdrawn.

Claim 1 was rejected under 35 U.S.C. § 103(a) as unpatentable over Brown, either alone or in view of DE '102. An obviousness rejection under 35 U.S.C. § 103 is improper unless the Examiner establishes a prima facie case of obviousness. A prima facie case of obviousness requires that the prior art references, either alone or in combination, teach or suggest each and every claim recitation.

Applicants' amended claim 1 recites, in part, a water purification device wherein the pressure control device includes a control valve, which is connected to the diaphragm unit, and wherein the control valve has a valve element, the valve element being acted upon by the pressure on the primary side in either an opening or a closing direction, and by the pressure on the secondary side in the other of the opening or the closing direction.

Brown does not teach or suggest that a control valve has a valve element, which is acted upon by the pressure on the primary side in either an opening or a closing direction, and by the pressure on the secondary side in the other of the opening or the closing direction. Instead, Brown teaches that shut-off valve 10 includes a diaphragm 14 arranged between a back pressure chamber 17 and a control chamber 20. (See, e.g., Brown, Fig. 1 and col. 3, lines 8-24.) Product water pressure in the chamber 20 moves the shut-off valve 10 in the closed direction (see, e.g., Brown, col. 3, lines 25-31), whereas pressure from a back pressure line 18 apparently acts against the diaphragm 14 in the opening direction. (See, e.g., *id.* and Fig. 1.) Back pressure line 18 connects to the regulating valve 30 (See Brown Fig. 1) and not by pressure on the inlet 54 side of filtration unit 50. Thus, Brown does not teach or suggest that pressure on the primary side acts upon a valve element of a control valve in *either* direction, unlike the device recited by Applicants' claim 1.

DE '102 does not remedy the deficiencies in the teachings of Brown as applied to Applicants' claim 1, at least in that DE '102 also fails to teach or suggest a control valve having a valve element, which is acted upon by the pressure on the primary side in either an opening or a closing direction, and by the pressure on the secondary side in the other of the opening or the closing direction.

Therefore, neither Brown nor DE '102, nor the combination thereof, teaches or suggests each and every recitation of Applicants' claim 1. Accordingly, Applicants respectfully submit that the rejection of claim 1 under 35 U.S.C. § 103(a) as unpatentable over Brown, either alone or in view of DE '102, is improper for at least this reason, and should be withdrawn.

Claims 3 and 11 were rejected under 35 U.S.C. § 103(a) as unpatentable over Brown, either alone or in view of DE '102. Claims 3 and 11 both depend directly from claim 1 and include additional recitations thereto. Accordingly, Applicants respectfully submit that the rejection of claims 3 and 11 under 35 U.S.C. § 103(a) as unpatentable over Brown, either alone or in view of DE '102, is improper for at least the same reasons stated in connection with claim 1, and should be withdrawn.

Claim 7 was rejected under 35 U.S.C. § 103(a) as unpatentable over Oklejas in view of Kim. An obviousness rejection under 35 U.S.C. § 103 is improper unless the Examiner establishes a prima facie case of obviousness. A prima facie case of obviousness requires that the prior art references, either alone or in combination, teach or suggest each and every claim recitation.

Claim 7 depends indirectly from Applicants' claim 1 and includes additional recitations thereto. Applicants' amended claim 1 recites, in part, a water purification device wherein the primary side is connected with a pressure control device, which controls the pressure on the primary side in dependence of the pressure on the secondary side.

Oklejas does not teach or suggest each and every claim 1 recitation. For instance, Oklejas does not show or disclose a water purification device having a pressure control device, which controls the pressure on the primary side in dependence of the pressure on the secondary side.

Kim does not remedy the deficiencies in the teachings of Oklejas as applied to Applicants' claim 1, at least in that Kim also fails to teach or suggest a water purification device having a pressure control device, which controls the pressure on the primary side in dependence of the pressure on the secondary side.

Therefore, neither Oklejas nor Kim, nor the combination thereof, teaches or suggests each and every recitation of Applicants' claim 1. Accordingly, Applicants' respectfully submit that the rejection of dependent claim 7 under 35 U.S.C. § 103(a) as unpatentable over Oklejas in view of Kim is improper for at least this reason, and should be withdrawn.

Claim 8 was rejected under 35 U.S.C. § 103(a) as unpatentable over DE '102. An obviousness rejection under 35 U.S.C. § 103 is improper unless the Examiner establishes a prima facie case of obviousness. A prima facie case of obviousness requires that the prior art references, either alone or in combination, teach or suggest each and every claim recitation. If reference teachings must be combined or modified, a prima facie case of obviousness further requires that there be a motivation or suggestion in the prior art to make the combination or modification.

Applicants' amended claim 8 recites, in part, a water purification device wherein a pressure control device controls the pressure on the primary side so that the pressure on the secondary side is in a range from 35 to 180 bar.

DE '102 does not teach or suggest each and every claim 8 recitation. For instance, DE '102 does not teach or suggest a pressure control device that controls the pressure on the primary side so that the pressure on the secondary side is in a range from 35 to 180 bar.

The Examiner acknowledges the shortcomings of DE '102, but states:

However, it is considered obvious to optimize the secondary side pressure in order to maintain system efficiency and depending upon the flow characteristics of the dialysis system in which the product water will be used. (Office Action, p. 5.)

Applicants respectfully disagree. Even if it is obvious to optimize the secondary side pressure of DE '102's reverse osmosis system for producing permeate for a dialysis system, it does not follow that Applicants' claimed range would be taught or suggested as a result of such optimization.

Applicants' note that a pressure of 1 bar corresponds to a pressure of about 14.5 pounds per square inch (psi). Thus, Applicants' claimed range for pressure on the secondary side extends from approximately 507 psi to approximately 2610 psi. For reference purposes, Applicants' enclose a copy of

the product specifications of a dialysis machine (available at www.aksys.com/phd/specifications.asp), indicating that the pressure requirements for water entering the dialysis machine are 0.3 bar to 2.7 bar (5 psi to 40 psi).

Accordingly, the Examiner's assertion that Applicants' claimed range could be rendered obvious by the optimization of the secondary side pressure of DE '102's reverse osmosis system appears unsupportable. If the Examiner is taking official notice that optimization of secondary side pressure for supplying permeate to a dialysis system would obviously result in a pressure corresponding to Applicants' claimed range, such official notice is traversed and the Examiner is requested to produce supporting evidence, pursuant to MPEP 2144.03.C.

At least because DE '102 does not teach or suggest the recitations of Applicants' claim 8 and there is nothing in the prior art to motivate one of ordinary skill in the art to modify DE '102 so as to teach or suggest the recitations of Applicants' claim 8, Applicants respectfully submit that the rejection of claim 8 under 35 U.S.C. § 103(a) as unpatentable over DE '102 is improper for at least this reason, and should be withdrawn.

Claim 10 was rejected under 35 U.S.C. § 103(a) as unpatentable over Oklejas. An obviousness rejection under 35 U.S.C. § 103 is improper unless the Examiner establishes a prima facie case of obviousness. A prima facie case of obviousness requires that the prior art references, either alone or in combination, teach or suggest each and every claim recitation.

Applicants' claim 10 depends directly from claim 9. Claim 9 recites, in part, a water purification device wherein a pressure control device controls the pressure on the primary side in dependence of the quality of the water to be purified. Claim 10 further recites that the pressure control device sets a pressure difference across the diaphragm with drinking water in the range from 3 to 7 bar, with impurified water in the range from 7 to 30 bar and with saltwater in the range from 30 to 80 bar.

Oklejas does not teach or suggest each and every recitation of Applicants' claim 9. For instance, Oklejas does not teach or suggest a pressure control device

that controls the pressure on the primary side in dependence of the quality of the water to be purified. As noted above, Oklejas teaches setting a throttle valve 17 to maintain a pressure of 1000 psi in a membrane chamber 11 for saltwater. Oklejas does not teach that the throttle valve 17 is controlled to change or adjust this setting if some other type of water is to be purified. Thus, Oklejas does not teach or suggest that a pressure control device is able to control the primary side pressure in dependence of the quality of the water to be purified, as recited by Applicants' claim 9, much less that a pressure control device is able to establish a pressure drop across the membrane chamber 11 in each the ranges specified by claim 10 for the various types of water.

Therefore, Oklejas does not teach or suggest each and every recitation of Applicants' claim 9 or dependent claim 10. Accordingly, Applicants respectfully submit that the rejection of claim 10 under 35 U.S.C. § 103(a) as unpatentable over Oklejas is improper for at least this reason, and should be withdrawn.

Having traversed each and every claim rejection, Applicants' respectfully request that the rejection of claims 1-4 and 6-11 be withdrawn, and claims 1-4 and 6-12 be passed to issue.

Applicants respectfully submit that nothing in the current Amendment constitutes new matter. Amendments to claims 1-11 combined subject matter from original claims and/or were for better conformity to U.S. practice. New claim 12 is support by at least paragraph [0029] of the Specification, and the Figure.

Application No.: 10/761,746

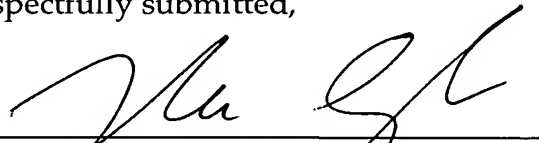
Office Action dated: June 20, 2006

Response to Office Action with Extension of Time dated: October 20, 2006

Applicants believe no additional fees are due in connection with this Amendment and Response, beyond the fee for a one-month extension. If any additional fees are deemed necessary, authorization is hereby granted to charge any such fees to Deposit Account No. 13-0235.

Respectfully submitted,

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